H. 화학산업과 e-Commerce

(주)마이크로소프트

김 은 호

The Internet As A Catalyst

Source: The Economist
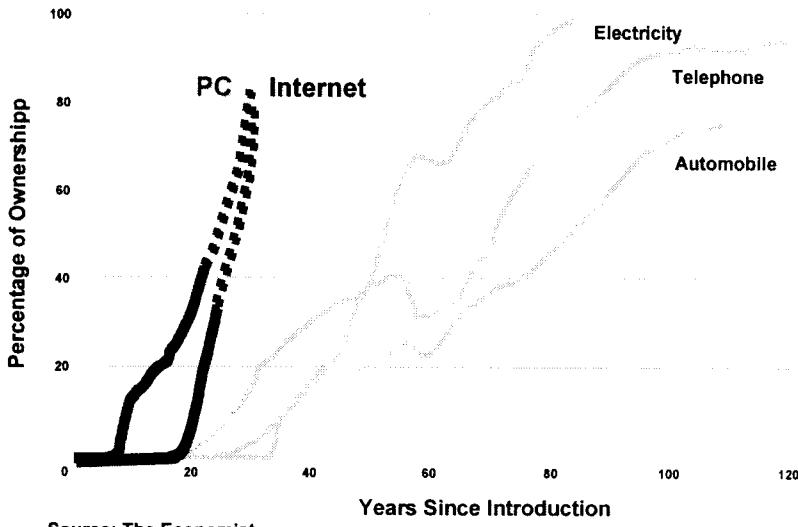
E-Commerce Technology Adoption Curve

Mainstream Business
Packaged solutions
Demonstrable benefits
ROI focused

Critical
Mass

Early
Mass
Market

Early Adopters

Visionaries

1997   1998   1999   2000   2001   2002
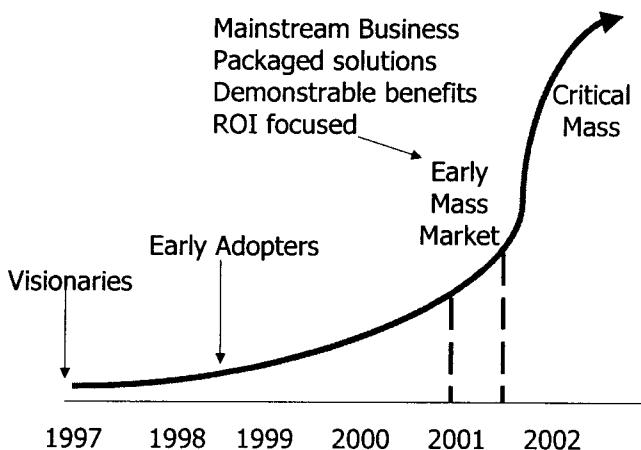
기업의 변화 - Old world & New world

전체 경제에서의 가치의 이전 - 1998

Company Name	Sales ($Mil)	Market Cap ($Mil)	Number of Employees
Old Economy			
General Motors Corp.	161,315.0	58,699.1	594,000
Sears, Roebuck & Co.	41,322.0	17,160.7	324,000
Merrill Lynch & Co.	35,853.0	32,652.7	63,800
New York Times Co.	2,936.7	5,377.5	13,200
Barnes & Noble, Inc.	2,796.9	2,273.2	14,500
New Economy			
America Online Inc.	2,600.0	111,375.6	8,500
Amazon.com, Inc.	610.0	21,758.2	2,100
E*TRADE Group, Inc.	245.3	6,957.3	833
Yahoo! Inc.	203.3	34,086.9	803
eBay Inc.	47.4	19,296.5	160

Sources: Bloomberg, VentureSource, company financial reports

Market Cap. Ranking: US

($millions)

1992		1993		1994		1995	
1 EXXON	63,286	1 EXXON	78,557	1 GENERAL ELECTRIC	89,827	1 GENERAL ELECTRIC	92,372
2 PHILIP MORRIS	68,770	2 GENERAL ELECTRIC	73,353	2 EXXON	61,041	2 EXXON	82,735
3 GENERAL ELECTRIC	60,970	3 PHILIP MORRIS	67,710	3 COCA-COLA	54,007	3 AT & T	51,196
4 MERCK	57,977	4 COCA-COLA	56,038	4 PHILIP MORRIS	48,150	4 COCA-COLA	71,931
5 COCA-COLA	52,411	5 MERCK	42,906	5 GENERAL MOTORS	44,036	5 WAL-MART STORES	58,902
6 INTL. BUSINESS MACHINES	49,120	6 PROCTER & GAMBLE	36,501	6 MERCK	38,871	6 PHILIP MORRIS	55,699
7 BRISTOL MYERS SQUIBB	41,412	7 PEPSICO	33,101	7 PROCTER & GAMBLE	36,845	7 MERCK	53,187
8 PROCTER & GAMBLE	33,513	8 IBM	31,572	8 E. L. DU PONT DE NEMOURS	35,558	8 PROCTER & GAMBLE	48,476
9 JOHNSON & JOHNSON	32,009	9 E. L. DU PONT DE NEMOURS	31,567	9 FORD MOTOR	32,544	9 INTL. BUSINESS MACHINES	46,256
10 E. L. DU PONT DE NEMOURS	29,568	10 BRISTOL MYERS SQUIBB	29,395	10 MOBIL	31,555	10 MICROSOFT	41,340
11 ABBOTT LABORATORIES	25,402	11 GENERAL MOTORS	27,658	11 IBM	30,605	11 E. L. DU PONT DE NEMOURS	41,216
12 PEPSICO	25,078	12 MOBIL	27,020	12 PEPSICO	30,354	12 JOHNSON & JOHNSON	33,236
13 PFIZER	23,941	13 AMOCO	26,957	13 MOTOROLA	29,563	13 MOBIL	36,639
14 AMERICAN HOME PRODUCTS	23,508	14 JOHNSON & JOHNSON	26,492	14 INTEL	29,103	14 INTEL	35,172
15 MOBIL	23,693	15 CHEVRON	25,160	15 CHEVRON	23,446	15 GENERAL MOTORS	33,133
16 GENERAL MOTORS	22,656	16 INTEL	24,192	16 BRISTOL MYERS SQUIBB	27,707	16 AMERICAN INTL. GROUP	32,910
17 AMOCO	21,775	17 FORD MOTOR	24,050	17 AMOCO	26,723	17 GTE	32,155
18 CHEVRON	21,367	18 MINNESOTA MINING & MFG	23,437	18 JOHNSON & JOHNSON	25,558	18 BRISTOL MYERS SQUIBB	32,109
19 ELI LILLY	21,105	19 ABBOTT LABORATORIES	21,301	19 HEWLETT-PACKARD	22,525	19 MOTOROLA	32,025
20 MINNESOTA MINING & MFG	19,905	20 AMERICAN HOME PRODUCTS	19,363	20 MINNESOTA MINING & MFG	22,172	20 AMOCO	31,583

1996		1997		1998		1999	
1 GENERAL ELECTRIC	136,523	1 GENERAL ELECTRIC	169,368	1 GENERAL ELECTRIC	260,147	1 Microsoft Corporation	483,27
2 COCA-COLA	101,240	2 COCA-COLA	147,619	2 MICROSOFT	199,046	2 General Electric	342,60
3 AT & T	98,122	3 EXXON	125,587	3 COCA-COLA	184,862	3 International Business	204,11
4 EXXON	98,093	4 MICROSOFT	119,112	4 EXXON	158,784	4 Intel Corporation	217,53
5 PHILIP MORRIS	79,613	5 INTEL	113,195	5 MERCK	156,965	5 Nippon Telegraph and	206,45
6 MERCK	74,496	6 MERCK	106,693	6 INTEL	125,741	6 Cisco Systems, Inc.	203,25
7 INTL. BUSINESS MACHINES	68,257	7 PHILIP MORRIS	104,591	7 PFIZER	114,156	7 Wal-Mart Stores, Inc.	202,20
8 JOHNSON & JOHNSON	62,629	8 PROCTER & GAMBLE	85,443	8 WAL-MART STORES	113,731	8 Exxon Corporation	189,68
9 MICROSOFT	60,811	9 JOHNSON & JOHNSON	77,073	9 PROCTER & GAMBLE	113,635	9 Lucent Technologies	187,40
10 PROCTER & GAMBLE	57,068	10 INTL. BUSINESS MACHINES	74,303	10 BRISTOL MYERS SQUIBB	106,333	10 BP Amoco p.l.c.	183,97
11 WAL-MART STORES	54,495	11 WAL-MART STORES	65,948	11 AT & T	105,979	11 AT&T Corp.	177,36
12 HEWLETT-PACKARD	50,932	12 E. L. DU PONT DE NEMOURS	61,294	12 PHILIP MORRIS	102,942	12 MCI WorldCom, Inc.	165,71
13 PEPSICO	49,147	13 BRISTOL MYERS SQUIBB	62,349	13 JOHNSON & JOHNSON	100,631	13 Merck & Co., Inc.	162,14
14 INTEL	48,348	14 PFIZER	58,742	14 INTL. BUSINESS MACHINES	98,322	14	160,72
15 WALT DISNEY	47,197	15 AMERICAN INTL. GROUP	58,613	15 AMERICAN INTL. GROUP	88,386	15 The Coca-Cola	154,65
16 E. L. DU PONT DE NEMOURS	45,120	16 AT & T	56,322	16 BERKSHIRE HATHAWAY	79,740	16 American International	147,34
17 MOBIL	44,192	17 CITICORP	53,675	17 LUCENT TECHNOLOGIES	78,067	17 Bristol-Myers Squibb	139,25
18 BERKSHIRE HATHAWAY	43,680	18 HEWLETT-PACKARD	53,322	18 BELL ATLANTIC	77,650	18 Pfizer Inc.	138,96
19 AMERICAN INTL. GROUP	43,584	19 MOBIL	51,412	19 E. L. DU PONT DE NEMOURS	77,019	19 Royal Dutch Petroleum	134,42
20 BRISTOL MYERS SQUIBB	42,630	20 WALT DISNEY	50,461	20 SBC COMMUNICATIONS	75,324	20 Johnson & Johnson	131,07

Ideas Have Value

TOYS R US   **eToys**.com

$4,364 M

$3,623

$2,813 M

-$24 M

Book Value ▪ Market Capitalization
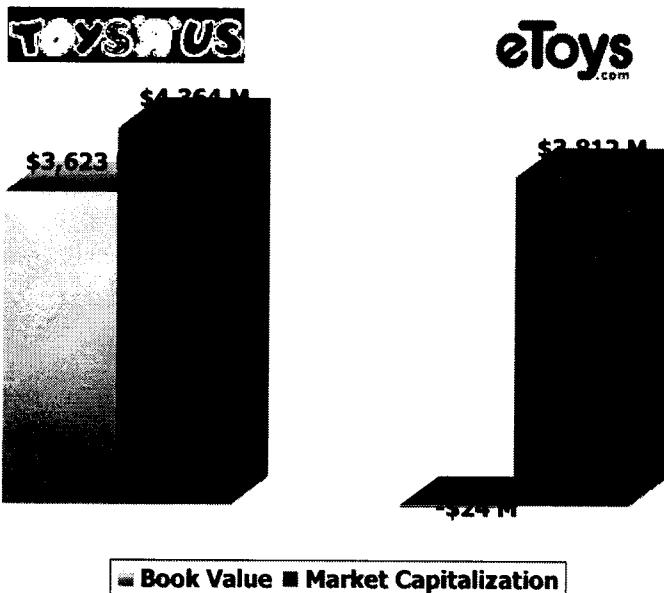
Internet Changes & Business Drivers

*Market developments driving, and being driven by,
changes in Internet technologies*

Business to Consumer
(B2C) Commerce

Enterprise Application
Integration

EDI
Expansion

Internet

Business to Business
(B2B) Commerce

Business Process Integration
or Automation
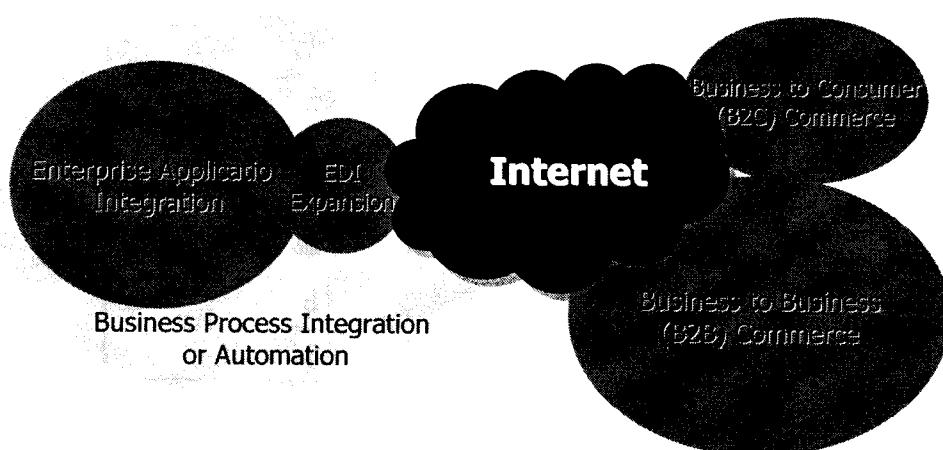
B2B E-Commerce

- More than just buying and selling
- Deeper relationships with partners
- The "fulfillment engine" behind B2C

$1.5T by 2003

Source: Forrester

- ☐ Industrial equipment
- ☐ Heavy industries
- ☐ Construction
- ▨ Aerospace and defense
- ■ Pharmaceutical and medical
- ☐ Consumer goods
- ▨ Food and agriculture
- ☐ Shipping and warehousing
- ▨ Paper and office products
- ☐ Utilities
- ■ Petrochemicals
- ☐ Motor vehicles
- ■ Computing and electronics

Industries in the chart follow
the same order as in the legend

Dollars (billions)

$1,500

1,000

500

0

1998 1999 2000 2001 2002 2003

E-Commerce Data and Projections

	1999	2003
Population	59.7 억	63억
Web Users	1.30 억	3.50 억
URLS	7백5십만	77억
US Mix	50%	33%
Under 18	13.5%	22.3%
Web Rev.	$980억	$1.3조
% buying	26%	40%+
% B2B	72%	87%
Ad Spend	$33억	$100.8 억

Source: eGlobal Report – eMarketer – July 1999

Growing Complexity of Web Commerce

New Marketplaces

Suppliers

Finance	Human Resources
Manufacturing	Sales and Marketing
Information Technology	Research And Development

Portals, marketplaces

Novo Nordisk

Resellers

Computing Everywhere

Services

Content

Portal

Platform

Personal computers

Intelligent appliances

Smart objects
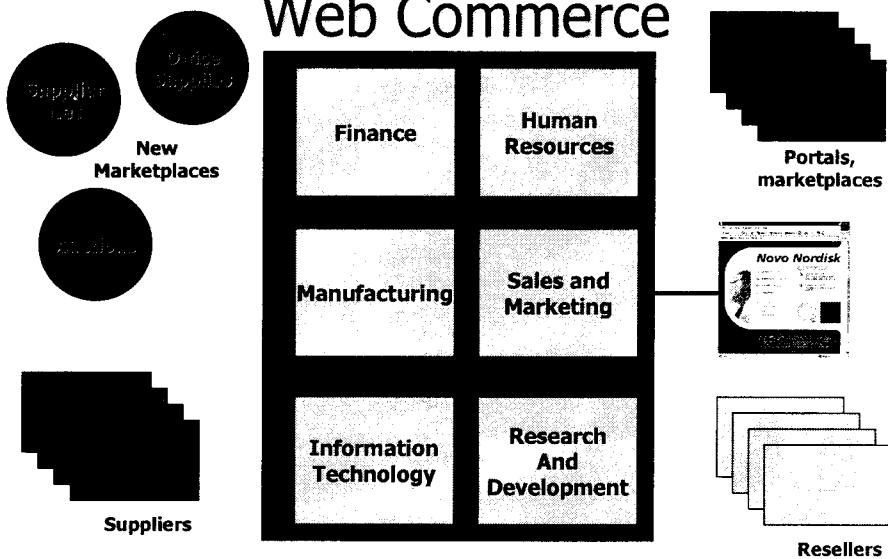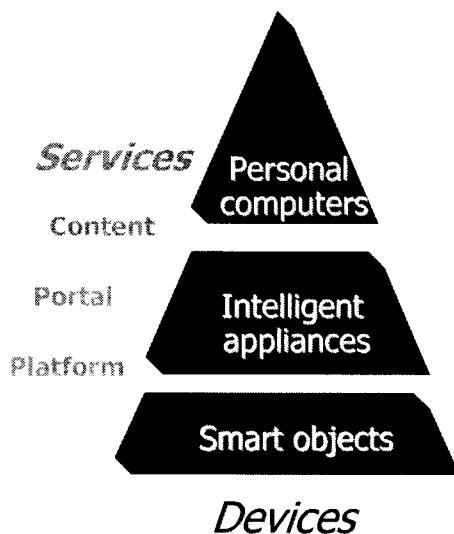
Devices

Gradual … but Unstoppable!

U.S. Shipment of PCs vs. Information Appliances (M)
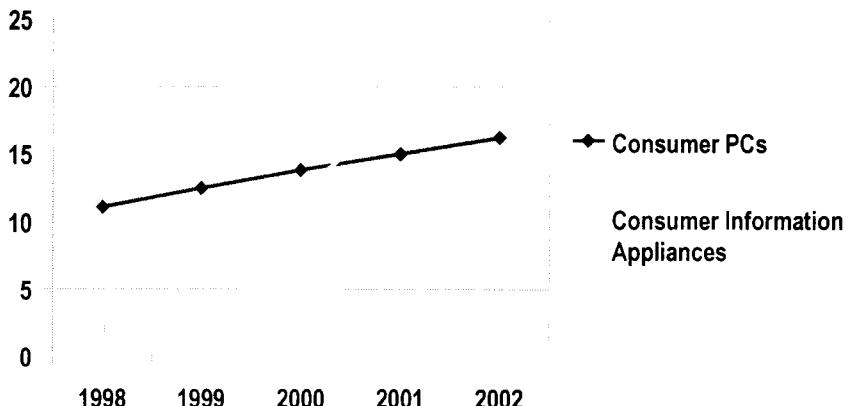
Legend:
- ◆ Consumer PCs
- Consumer Information Appliances

Digital Homes & Consumers

- 40% of US homes now online
- 26M homes with broadband by 2003

Adults Ordering On-Line

Source: CyberDialogue

Internet Site Taxonomy

Value/ROI (vertical axis)

Revenue, Customer Satisfaction, Loyalty, New Business, Reduced Costs (profit), Improved Cycle Times

P6 -Partner

P5 -Process

P4 -Purchase

P3 -Personal

P2 -Pleasing

P1 -Presence

Extensibility, Security, Scalability, Interoperability, Availability, Manageability

Cost/Complexity (horizontal axis)
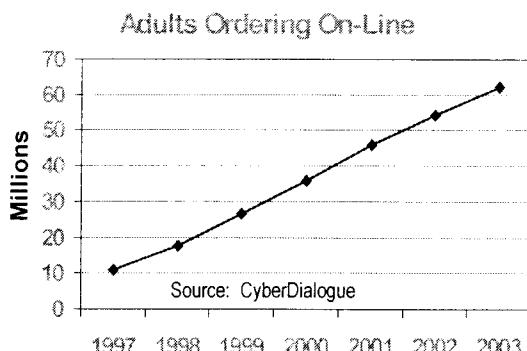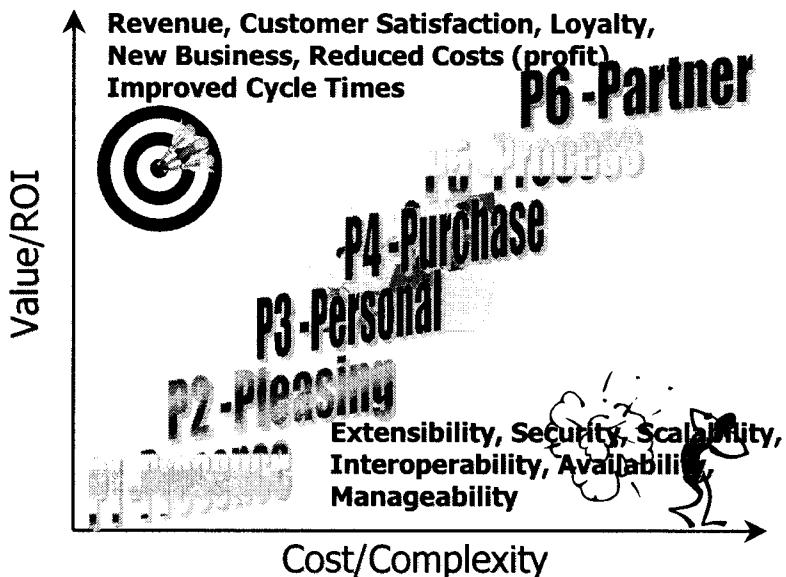
Maturity of Web Infrastructure

XML

HTML

Technology   *TCP/IP*

Standard   Connectivity   Presentation   Programmability

Innovation   *FTP, E-mail, Gopher*   *Web Pages*   *Web Services*

Browse the Web

Program the Web
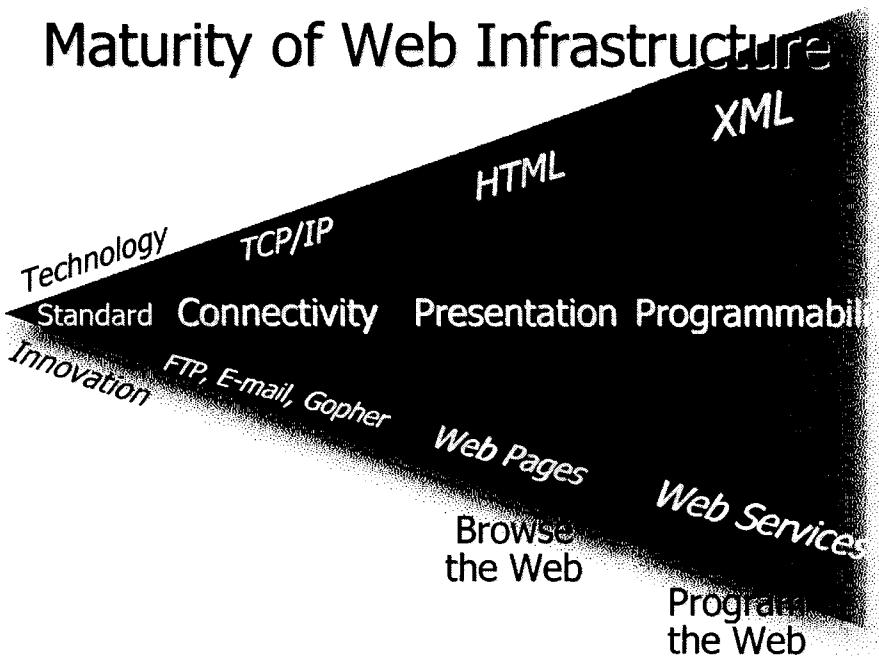
Web technology를 어떻게 사용할까?

- Reduce costs
- Provide world class support and services to customers and partners
- Build flexible commerce applications as quickly as possible
- Integrate systems with internal applications and platforms
- Integrate processes within and between organizations
- Attract new customers and take advantage of new, emerging markets

The Way is Simple

Only make new mistakes

Redundant systems are death

Why do my customers really buy my products?

Customers & Partners

Enterprise E-Commerce Vision

- Leverage web standards and technology to enrich customer and partner relationships
- Automate value chain processes using web infrastructure
- Provide integration and interoperability with existing systems to minimize time to market and maximize ROI
- Support distributed MegaServices and communities for promotion, trade and collaboration

e-Commerce Solution Requirements

- Industrial strength, commodity-based platform supporting lights out operations
  - Scalability
  - Interoperability
  - Availability
  - Manageability
  - Security
- Unmatched application, service, and hosting partner offerings
- Best tools for development of applications and services
- Reusable, distributed services easily accessible as commerce building blocks

Top E-Tailers – August 1999

* Of the top 10 Internet retail sites,
  6 are built on the Microsoft platform.

Rank	Site	Buyers	Unique Users	Buy Rate
2	buy.com	314,000	2,586,000	12.1%
3	barnesandnoble.com	289,000	3,871,000	7.5%
5	planetrx.com	256,000	1,655,000	15.5%
6	mothernature.com	241,000	1,910,000	12.6%
7	drugstore.com	191,000	1,082,000	17.6%
10	smarterkids.com	93,000	1,734,000	5.4%

Source: internet.com Corp, August 1999

many companies using Internet Tech.

Industrial Strength Platform
Mission critical online applications

- Online catalog: 8+ million books

- Online catalog: 1.5+ million items

- $ volume: $30+ million per day

- $ volume: $50M Q1, 12X a retail store

- Transactions: 100,000+ orders in a day

Industrial Strength Platform
Mission critical online applications

- Transactions: 24,000+ orders in a day, over 1,000,000 line items total

- Availability: 99.999+% under load of ~30 million hits per day

- Growth: From 0 to 5+ billion hits per month in less than one year

- Growth: Up to 40mil records per hour

- Users: Tens of thousands of accounts

Scalability

- Requirement
  - Scale commerce application as traffic increases
  - Provide custom pages for different customers
  - Streamline, simplify, and reduce cost of support
- Solution
  - High volume, mission-critical e-commerce with standard software
  - Dual 333Mhz Dell PowerEdge Servers, Cisco load balancing
- Results
  - $30 million per day web sales and growing
  - Service 10,000 custom business pages
  - Expose 45,000 support entries for 100,000 customers per week

Availability

- Requirement
  - Comply with changing SEC oversight regulations
  - Monitor up to one billion shares transacted per day in realtime
  - 100% availability while market is open
- Solution
  - Replaced oversight system on Tandem mainframe
- Results
  - 99.999+% reliability since going live
  - Cost effective scalability, tested at four billion shares transacted per day (4 times the requirement)
  - 2+ terabyte SQL production database, 6 billion records in base transaction table
  - Real-time implementation of new fraud detection rules

Interoperability

MERISEL
World Class Distribution

- Requirement
  - Access SAP R/3 on UNIX, and CICS on mainframe
  - Provide real time access to legacy data
  - Provide scalable, robust, interoperable system
- Solution
  - Custom application to link customers with real-time inventory and order-entry systems
- Results
  - "Virtual inventory" capability
    - Customer catalogs provide product information via transparent pass-through calls to Merisel
  - Automated order creation
  - Electronic reseller service to 25,000 resellers

|The|Business Internet
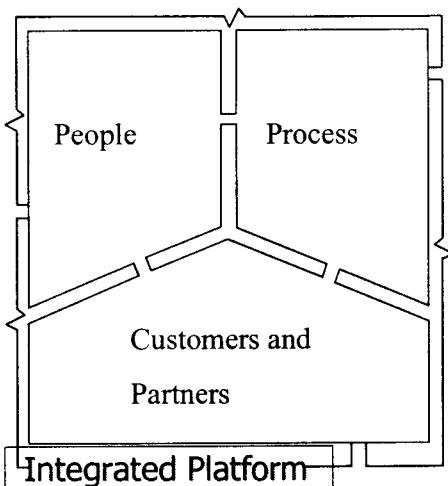
People   Process

Customers and

Partners

Integrated Platform

Microsoft E-Commerce Today

- 49% market share among commerce server products
- 36% commerce sites on NT with IIS
- 52% of top 50 commerce sites on NT/IIS
- 64% of web-based procurement systems on NT/IIS
- 60% of top 10 web retailers on NT/IIS

Microsoft E-Commerce Today

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- 60% of top 10 web retailers on NT/IIS

Windows DNA 2000

Megaservices	Web Service building blocks
Commerce Server	Next-generation e-commerce
BizTalk Server	Business process integration
Host Integration	Works with what you have
AppCenter Server	Server farm management
SQL Server 2000	RDBMS with XML store
Windows 2000	Built-in application services

MSN for the Enterprise

Integrating the Platform with the Portal

Develop long-term campaigns that work

■■■	#3 in reach as an independent portal, #1 in reach through LinkExchange, reaching over 70% of all Internet users
■■■	Target content by demographics, geography, ZIP code
■■■	112+ unique placements to MSN, digital brochures, sponsorships, network packages
■■■	Search, Content Sponsorships, and Affiliate Programs

Private labeling of products and properties

msn Hotmail   **M S NBC**   **msn CarPoint**   **msn Expedia**   **msn HomeAdvisor™**   **msn MoneyCentral™**

Sharing what we learn through reporting and collaboration

One MSN, 3rd Most Popular

No. Domain	Reach %	Reach (000)
1 YAHOO.COM	51.1	30,674
2 AOL.COM	49.3	29,602
3 MSN.COM	**34.2**	**20,489**
4 GEOCITIES.COM	32.7	19,604
5 GO.COM	32.2	19,334
6 NETSCAPE.COM	31.1	18,666
7 EXCITE.COM	26.0	15,621
8 LYCOS.COM	24.0	14,401
9 MICROSOFT.COM	**23.8**	**14,283**
10 BLUEMOUNTAINARTS.COM	21.1	12,632
11 ANGELFIRE.COM	19.8	11,895
12 TRIPOD.COM	19.1	11,438
13 HOTMAIL.COM	**18.8**	**11,293**
14 ALTAVISTA SEARCH SERVICES*	16.2	9,709
15 XOOM.COM	15.5	9,270
MSNBC, MoneyCentral, HomeAdvisor, Expedia,		

msn Microsoft*

Source: Media Metrix 2/99

MSN Category Leadership

Hotmail - #1 with more than 35 million registered members; over 150,000 daily sign-ups

MSNBC - #1 general news site 20 out of 27 months since launch; 8 million monthly visitors

MoneyCentral - #2 personal finance site; 4.7 million monthly users

CarPoint - #1 car buying site; $450 million in cars sold through CarPoint affiliated dealers

Expedia - #2 travel site, over 5 million monthly users; #1 sales ($10.5 million in weekly bookings)

HomeAdvisor - #2 home buying guide; Voted #1 best new site on the year (PC Mag.)

Gaming Zone - #2 with 4.0 million monthly users; peak 30,262 simultaneous gamers

TransPoint Focus

Billers

- Rich, interactive communication with customer
- Enhanced customer care
- Reduced costs

Financial Institutions

- Active, early involvement in bill payment process
- Increased Web site traffic
- Information processing for billers

Consumers

- All bills in one place
- Control over payment
- Secure/reliable/easy
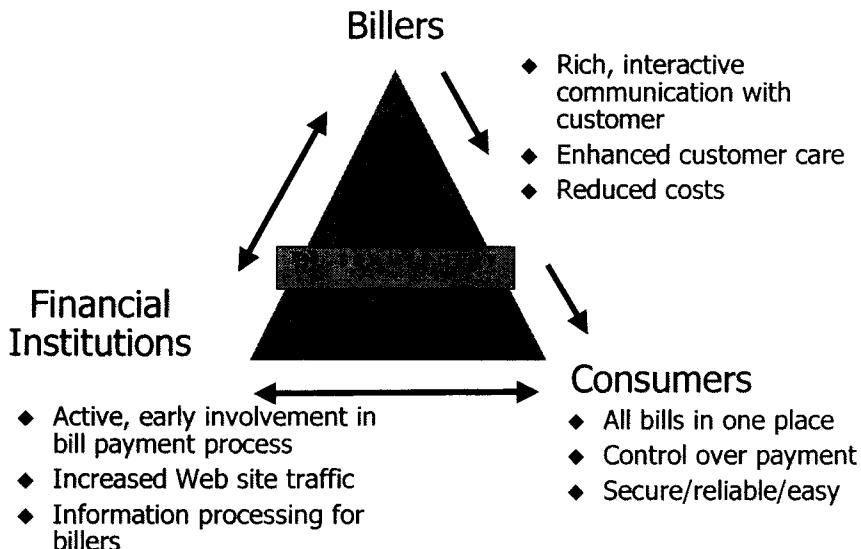
TransPoint Solution
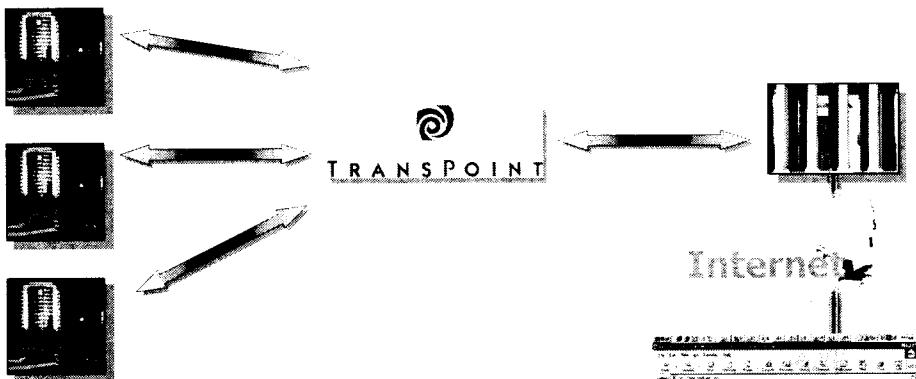
- Joint Venture of Microsoft, FDC and Citigroup
- 100+ billers, financial institutions signed
- Available Today

Plan Young. Live Well.
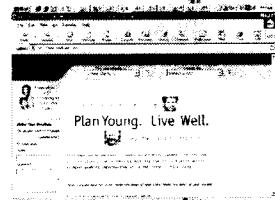
BizTalk Server Capabilities

Trading Profiles

POs

Invoice

Trading Profiles

SAP

PEOPLE Soft

SQL
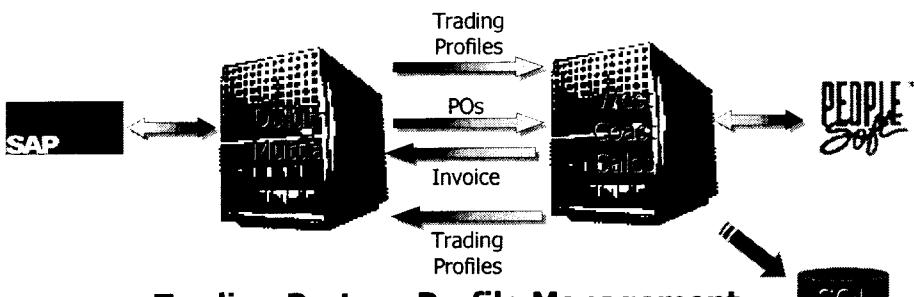
Trading Partner Profile Management
Business Desk (Profiles and Agreements)

Application Integration
EDI interoperability, XML tools for mapping formats

- Automated document interchange
  - *Content based routing, Digital Certificates (PKI)*

Rich Management and Analysis

Microsoft Commerce Strategy

Integrate   Build   Promote
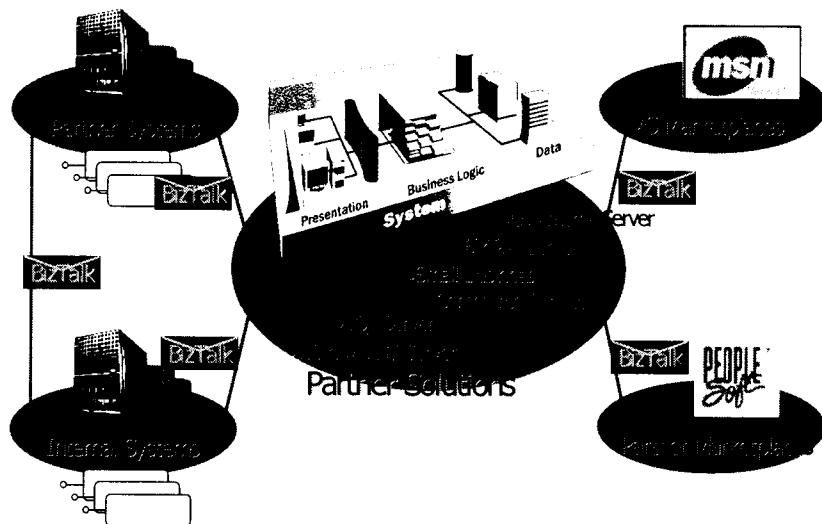
B2B E-Commerce in Petrochemical

	2000	2001	2002	2003	2004	% of total trade
Total [billions]	$406.2	$716.6	$1,166.9	$1,823.4	$2,695.5	17%
Computing and electronics	$230.2	$343.3	$427.3	$506.2	$592.9	40%
Motor vehicles	$35.1	$90.0	$190.2	$311.5	$411.5	26%
Petrochemicals	$27.0	$53.9	$103.2	$184.5	$299.2	17%
Utilities	$29.9	$56.5	$101.3	$170.1	$266.4	17%
Paper and office products	$14.4	$33.7	$73.9	$143.5	$235.3	24%
Consumer goods	$13.2	$28.1	$58.5	$116.5	$216.5	13%
Food and agriculture	$22.5	$41.2	$73.9	$128.1	$211.1	12%
Construction	$6.3	$15.1	$34.6	$74.2	$141.0	10%
Pharmaceutical and medical products	$4.3	$10.7	$26.2	$60.2	$124.0	14%
Industrial equipment and supplies	$7.0	$13.1	$23.8	$41.9	$70.3	7%
Shipping and warehousing	$4.6	$10.5	$22.4	$42.5	$68.1	20%
Aerospace and defense	$9.1	$15.8	$23.1	$29.0	$32.9	15%
Heavy industries	$2.6	$4.8	$8.6	$15.3	$26.5	3%

Totals may not equal sum of rows due to rounding

Source: Forrester Research, Inc.

e-Marketplace Opportunity Index
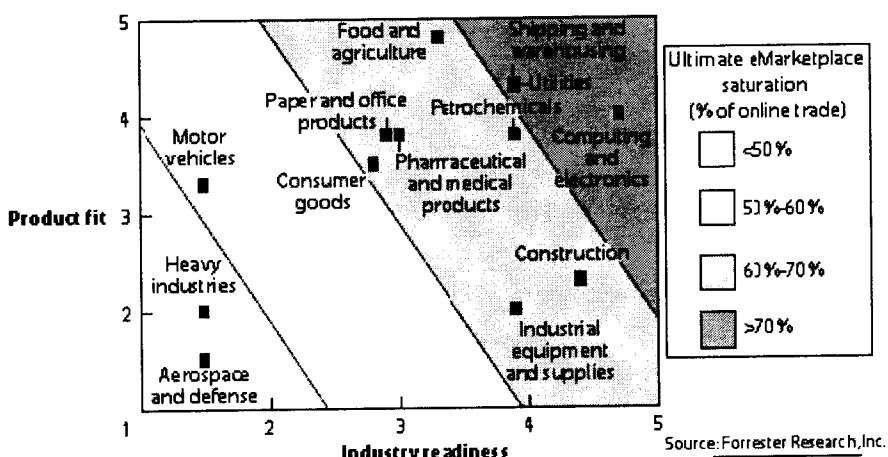
Source: Forrester Research, Inc.

PETROCHEMICALS

eCommerce revenues
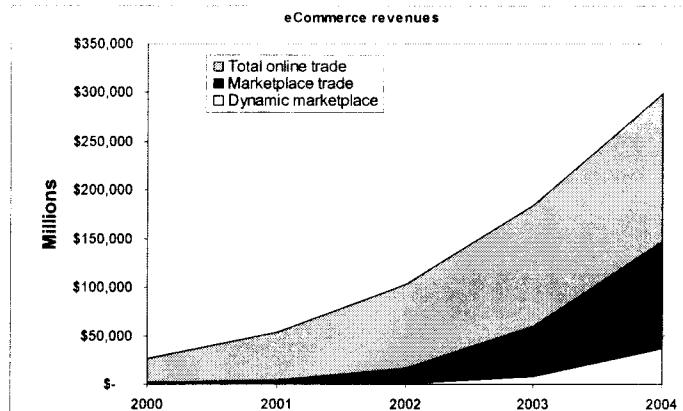
All numbers in millions

Summary of eCommerce revenues										
		2000		2001		2002		2003		2004
Total trade	$	1,383,479	$	1,469,985	$	1,561,899	$	1,659,561	$	1,763,329
Total online trade	$	26,966	$	53,899	$	103,234	$	184,518	$	299,185
Marketplace trade	$	1,639	$	3,665	$	16,951	$	59,849	$	147,135
Dynamic marketplace	$	24	$	118	$	1,170	$	8,329	$	37,039

Source: Forrester Research, Inc.

3.Case Study

3.1. Automationdirect.com

e-Commerce Example in PLCs
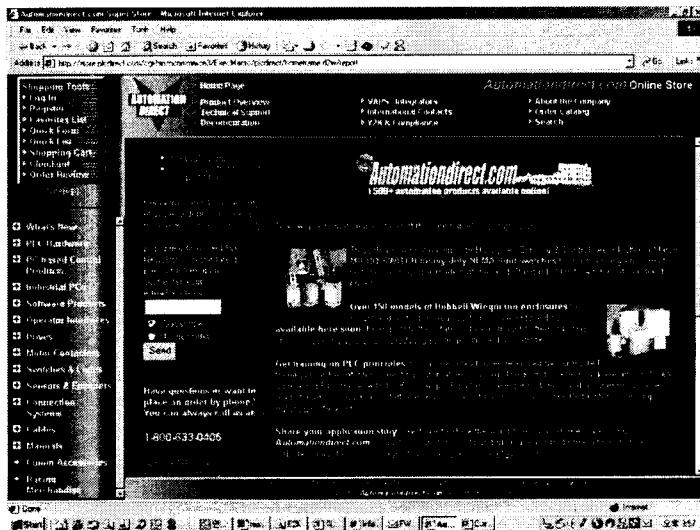
3.2. Mobil

Mobil Electronic Billing

-Operations in more than 140 countries
-7700 branded retail outlets in US

-36 mil. Credit card statement, 167 mil. transactions each year
- 1994, Mobile outsourced card processing to lower costs
-1996, company offered the ability to pay their bills over the internet, but no Mobil branding

-1999, Mobil launch new Internet based bill payment service

Mobil® The energy
to make a difference ™

3.3. Honam Petrochemical Corp.

Products

Ethylene (460,000MTA) → HDPE (210,000 MTA)	1st : 100,000 MTA / 2nd : 110,000 MTA / (3rd : 150,000 MTA)
Ethylene → EO/EG (400,000 MTA)	1st : 120,000 MTA / 2nd : 120,000 MTA / 3rd : 160,000 MTA → PET (65,000MTA) / EOA (30,000MTA)
Propylene (240,000 MTA) → PP (240,000 MTA)	1st : 120,000 MTA / 2nd : 120,000 MTA / (3rd : 200,000 MTA)
Mixed C4 → MMA (40,000 MTA) → PMMA (20,000 MTA)	
Pyrolysis Gasoline → BTX : BENZENE (95,000 MTA) / TOLUENE (45,000 MTA) / XYLENE (35,000 MTA)	

■ Under Construction : 3PE, EOA, 3PP, MMA

■ Plan : PMMA

Management Renovation

BPR (Business Process Reengineering)

Sales Process	1994 ~ 1996
R & D Process	1997 ~ 1998
Accounting Process	1997 ~ 1998
Production Process	1997 ~ 1999

Quality & Environment

ISO 9001	1995. 8
ISO 14000	1995. 12

Downsizing of Computer System

Client / Server System	1994 ~
Internet/Intranet	1997 ~

Knowledge Management   1998 ~

Information System Strategy
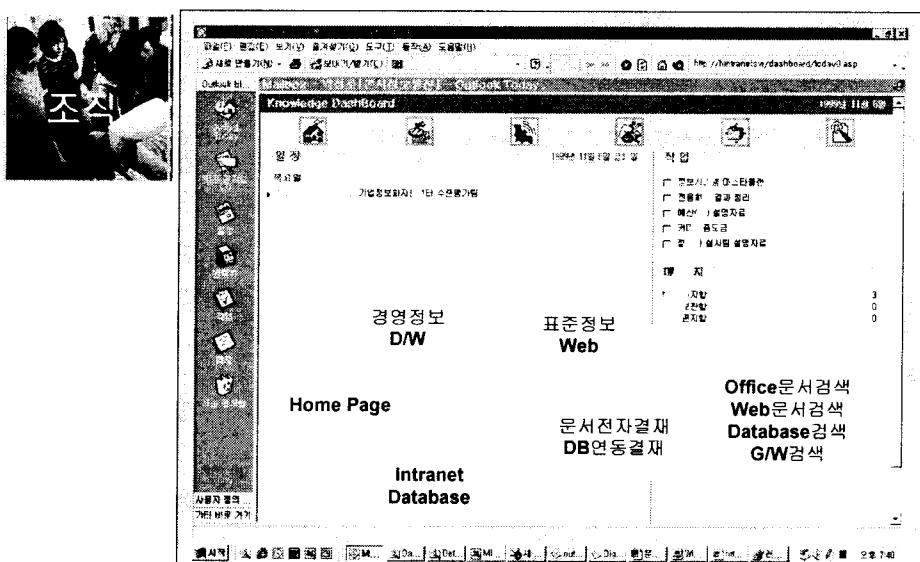
경영 목표   자원   시나리오   시스템

Demo – Portal Client

Demo – Portal Client : Collaboration
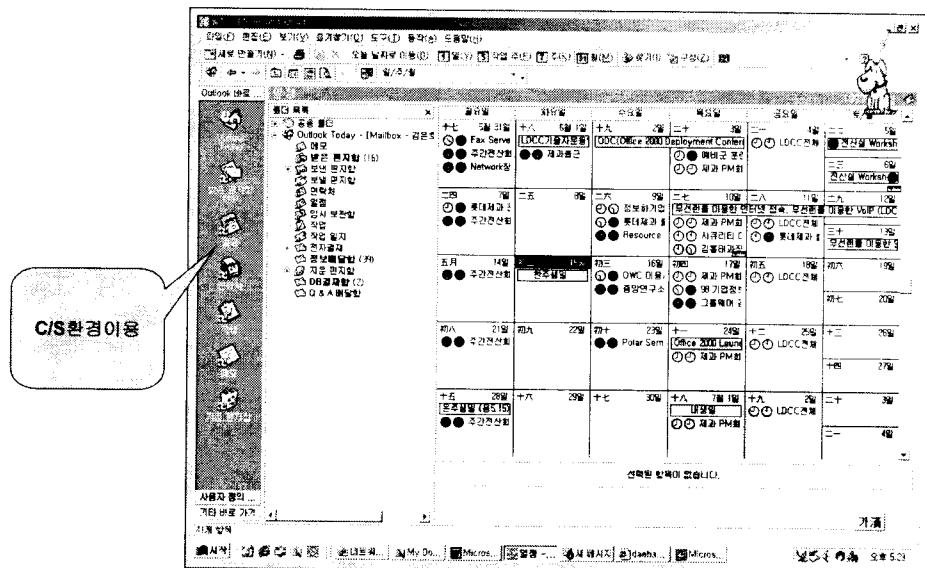
C/S환경이용

Demo – Portal Client : Collaboration

Web환경 이용

Demo – Portal Client :Workflow

문서전자결재

D/B연동결재 입력화면 예
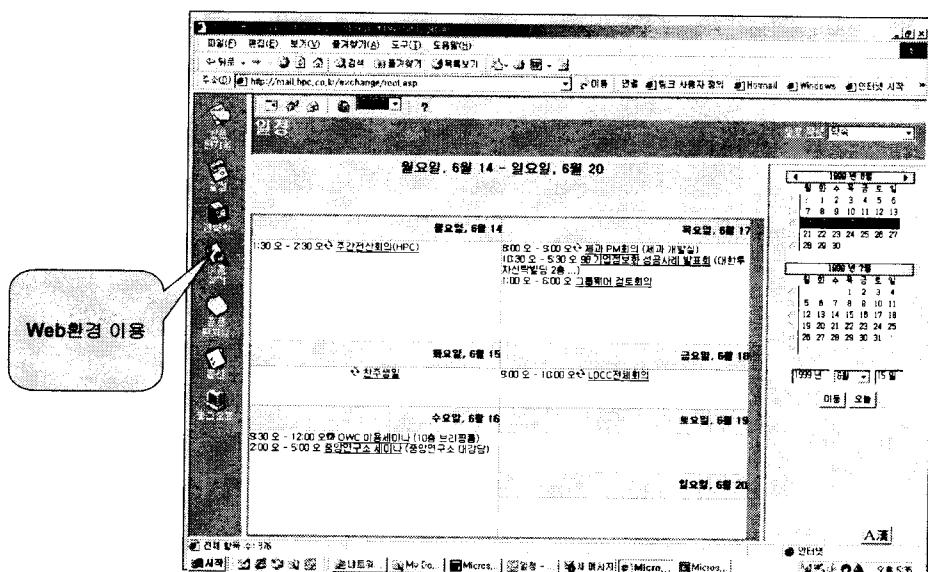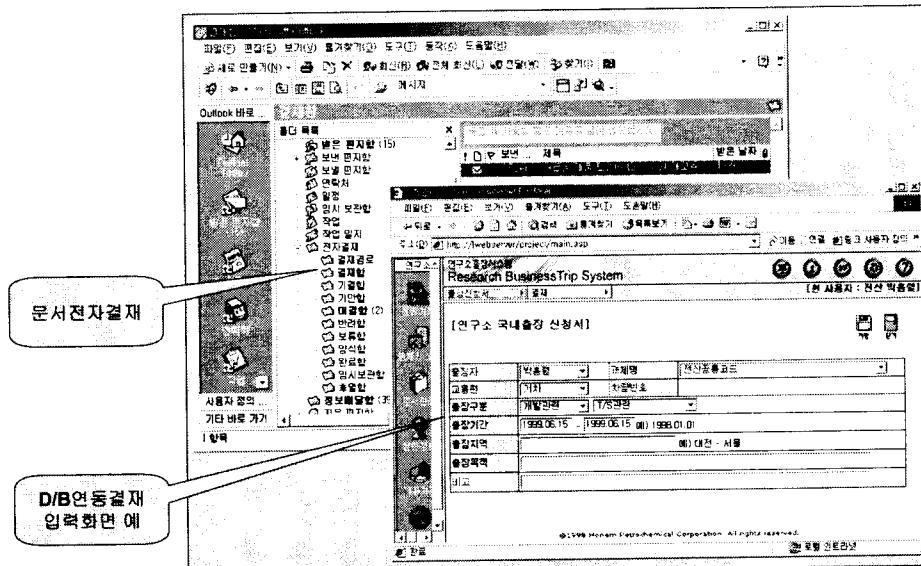
Demo – Portal Client :Workflow:Word Form

문서전자결재 (Word Form)

Demo – Portal Client :Workflow:e-Form

Demo – Portal Client :Publish & Search

Demo – Portal Client :Publish & Search

고객동록정보

Claim발생정보

Demo – Portal Client :Publish & Search

고객정보

고객사
인적사항

방문보고서

Demo – Portal Client :Publish & Search

Demo – Portal Client :Publish & Search

Demo – Portal Client :DataWarehouse

Demo – Portal Client :DataWarehouse

Demo – Portal Client :DataWarehouse

Demo – Portal Client :Push

Demo – Web Based n-tier DB Application

Demo – Web Based n-tier DB Application

Demo – from C/S system to Intranet

Demo – Web Based n-tier DB Application

Demo – Web Based n-tier DB Application

For More Information….

Contact :

김 은 호 차장

마이크로소프트 컨설팅사업부

Tel. 02-531-4992

e-mail : eunhokim@microsoft.com